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New Spectra of Symbiotic Stars. FRANCOIS V. DOSSON (introduced by Bertram Donn), *Goddard Space Flight Center.*—The spectroscopic observation of symbiotic stars has been extended in two ways; first, by increasing the resolution in the ordinary range of wavelength (3300–5000 Å); second, by extending the spectroscopic investigation to the photographic infrared (6500 to 9000 Å). The best spectra have been obtained for Z Andromedae in the photographic region, and for BF Cygni in the infrared.

Those spectra have been extensively studied and one can summarize the results as follows:

(1) High-dispersion spectra of Z Andromedae (10 Å/mm). More than 850 emission lines were measured and tentatively identified. Numerous new multiplets and individual lines, principally of *Fe* II and *Cr* II, are observed. The profile of hydrogen emission lines shows that the star was surrounded by a slowly expanding atmosphere. The spectra of ionized oxygen and nitrogen give some evidence of a fluorescent excitation process. Very few "forbidden" lines appear.

(2) Near-infrared spectra of BF Cygni and other symbiotic stars. A systematic study of their spectra in the wavelength range 6000–9000 Å was carried out for the first time. It confirmed the general similarity between the symbiotic stars. New emission lines were observed; among them some stay as yet unidentified.

The best series of spectrograms was obtained for BF Cygni. Eight spectra taken in 1958 and 1959 enable us to follow the variation of the star, which is conspicuous in the infrared. The intensity ratios of several emission lines vary quite rapidly. The behavior of the two emissions of *O* I at 7772 and 8446 Å, is discussed, taking into account the possible excitation by Ly-β, and the de-excitation of the metastable level of the $^5S^0 - {}^5P$ transition.